CLAIMS

I claim:

1. A device to benefit a living body, comprising:

a processor to provide an output signal, the output signal having a lower-frequency sweep and a higher-frequency sweep;

a driver responsive to the output signal to provide an amplified output signal; and

a transducer responsive to the amplified output signal to provide a vibrational output, the transducer being placed in proximity to a desired location on the body.

2. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep.

3. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a plurality of lower-frequency sweeps and a higher-frequency sweep.

4. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a plurality of higher-frequency sweeps.

5. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a plurality of lower-frequency sweeps and a plurality of higher-frequency sweeps.

6. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and to provide a pause between at least one of: (i) the lower-frequency sweep and the higher-frequency sweep, and (ii) the higher-frequency sweep and the lower-frequency sweep.

7. The device of claim 1 and further comprising:

a plurality of algorithms, each algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

an algorithm selector, functionally connected to the processor, to instruct the processor which algorithm to execute.

8. The device of claim 1 and further comprising:

a plurality of algorithms, each algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

a switch, functionally connected to the processor, to instruct the processor which algorithm to execute.

9. The device of claim 1 wherein the driver comprises an inverter responsive to the output signal from the processor to provide a driver signal, and a power bridge responsive to the driver signal to provide the amplified output signal.

10. The device of claim 1 wherein the driver comprises a power bridge responsive to a driver signal to provide the amplified output signal, and an inverter responsive to the output signal from the processor to provide the driver signal and to protect the power bridge from damage when the processor does not operate correctly.

11. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep and to cause the transducer to provide a predetermined output amplitude for each of the sweeps.

12. The device of claim 1 and further comprising:

an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

a control device to cause the processor to stop executing the algorithm.

13. The device of claim 1 and further comprising:

an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

a switch to cause the processor to start executing the algorithm.

14. The device of claim 1 and further comprising:

an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

a switch to cause the processor to stop executing the algorithm.

15. The device of claim 1 and further comprising:

an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, and

a control device to cause the processor to start executing the algorithm.

16. The device of claim 1 wherein the transducer vibrates with an approximate amplitude of 5 to 500 microns.

17. The device of claim 1 wherein the lower-frequency sweep has a frequency less than approximately 1000 Hz.

18. The device of claim 1 wherein the higher-frequency sweep has a frequency greater than approximately 1000 Hz.

19. The device of claim 1 wherein the lower-frequency sweep has a frequency greater than approximately 5 Hz.

20. The device of claim 1 wherein the higher-frequency sweep has a frequency less than approximately 22 kHz.

21. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep and wherein at least one of the lower-frequency sweep and the higher-frequency sweep is an upward frequency sweep.

22. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep and wherein at least one of the lower-frequency sweep and the higher-frequency sweep is a downward frequency sweep.

23. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep essentially simultaneously.

24. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep essentially sequentially.

25. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, at least one sweep having a substantially sinusoidal waveform.

26. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, at least one sweep having a substantially square waveform.

27. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a substantially linear frequency sweep.

28. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a substantially logarithmic frequency sweep.

29. The device of claim 1 and further comprising an algorithm to cause the processor to provide the output signal with a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a stepped frequency sweep.

30. The device of claim 1 and further comprising a memory containing at least one algorithm to cause the processor to provide the output signal.

31. The device of claim 1 wherein the processor comprises a microprocessor and a memory containing at least one algorithm to cause the processor to provide the output signal.

32. A process to benefit a living body, comprising:

providing an output signal, the output signal having a lower-frequency sweep and a higher-frequency sweep;

amplifying the output signal to provide an amplified output signal; and

converting the amplified output signal into a vibrational output in proximity to a desired location on the body.

33. The process of claim 32 and further comprising:

providing a plurality of algorithms, each algorithm to cause the output signal to have a lower-frequency sweep and a higher-frequency sweep, and

accepting a user selection as to the algorithm to be used.

34. The process of claim 32 and further comprising causing the output signal to have a plurality of lower-frequency sweeps and a higher-frequency sweep.

35. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a plurality of higher-frequency sweeps.

36. The process of claim 32 and further comprising causing the output signal to have a plurality of lower-frequency sweeps and a plurality of higher-frequency sweeps.

37. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep and to have a pause between at least one of: (i) the lower-frequency sweep and the higher-frequency sweep, and (ii) the higher-frequency sweep and the lower-frequency sweep.

38. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep and to provide a predetermined vibrational output for each of the sweeps.

39. The process of claim 32 and further comprising causing the vibrational output to have an approximate amplitude of 5 to 500 microns.

40. The process of claim 32 wherein the lower-frequency sweep has a frequency less than approximately 100 Hz.

41. The process of claim 32 wherein the higher-frequency sweep has a frequency greater than approximately 100 Hz.

42. The process of claim 32 wherein the lower-frequency sweep has a frequency greater than approximately 5 Hz.

43. The process of claim 32 wherein the higher-frequency sweep has a frequency less than approximately 22 kHz.

44. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep and wherein at least one of the lower-frequency sweep and the higher-frequency sweep is an upward frequency sweep.

45. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep and wherein at least one of the lower-frequency sweep and the higher-frequency sweep is a downward frequency sweep.

46. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep essentially simultaneously.

47. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep essentially sequentially.

48. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep, each sweep having a sweep waveform, and at least one sweep having a substantially sinusoidal waveform.

49. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep, each sweep having a sweep waveform, and at least one sweep having a substantially square waveform.

50. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a substantially linear frequency sweep.

51. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a substantially logarithmic frequency sweep.

52. The process of claim 32 and further comprising causing the output signal to have a lower-frequency sweep and a higher-frequency sweep, at least one sweep being a stepped frequency sweep.